HEPATITIS A EPIDEMIOLOGY, HIGH-RISK GROUPS AND PREVENTIVE MEASURES (LITERATURE REVIEW)

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Abstract. *Viral hepatitis A (VHA) is the main cause of acute viral hepatitis worldwide. It is mainly transmitted by direct contact with infected patients or by consuming contaminated water or food. The virus is endemic in low-income countries with poor sanitary and socio-demographic conditions. This article lists data on the epidemiology, prevalence, risk factors, vaccination and prevention of hepatitis A.*

Keywords: *Hepatitis A, epidemiology, risk groups, vaccination, preventive measures.*

Ways of transmission and epidemiology of hepatitis A virus

Hepatitis A is very resistant to severe physical conditions such as high ambient temperature, acidity and freezing for several hours or even months [4,5,6]. Its high resistance is due to the high degree of adhesive capsid [7] on the shell. This physical resistance and the deposition of high titers of the virus in the feces of infected people explain the association with poor hygienic conditions and wastewater pollution when sanitary conditions are not optimal [8]. It is basically a form of fecal-oral transmission from person to person that can be transmitted indirectly through the consumption of contaminated water or food. In developed countries, most infectious diseases are transmitted from person to person, while infections with food oracles usually lead to sporadic cases. However, several recent outbreaks in developed countries have been associated with contaminated food [9, 10]. Seafood can also be one of the main sources of infection [11,12], but more epidemics are associated with imported frozen foods and ready-to-eat foods such as frozen berries and vegetables [13]. Patients with hemophilia have long been considered at high risk of infection and are recommended for vaccination. However, virus inactivation, the use of sterilized recombinant plasma factors, and screening testing for VHA in the US have ensured that these patients are no more at risk than the general population [3]. The Virus can also be transmitted during organ transplantation [14].

Among countries, the incidence of Hepatitis A varies significantly depending on the socio-demographic index [15]. Low-and middle-income countries are the most common areas of hepatitis A, mainly in Africa and South Asia [1,16]. The endemic nature of VHA has an age-specific dispersal characteristic according to it; the highest is at age 10 (≥90%), age 15 (≥50%), ≤50% in age groups above age 15-30 [2].

Although VHA infections in children often appear subclinical, children play a key role in hepatitis A epidemiology. First, young children do not have strong personal hygiene skills, which facilitates fecal-oral transmission of hepatitis A. Secondly, in countries without universal vaccination in children and with low hepatitis A endemicity, children are generally immunocompromised and therefore highly susceptible to VHA infection. In addition, children are more likely to have an epidemic due to the relatively high infection rate of hepatitis A and low immune levels (lack of mass immunity). Thirdly, hepatitis A infections in children are mostly mild

or even asymptomatic, but are nevertheless very common, so many infected children may be overlooked, which contributes to the large-scale spread of hepatitis A [17].

Prevention of hepatitis A

Although there is currently a special prophylaxis (vaccination) for hepatitis A, mandatory implementation of these measures has not been established by all countries. Therefore, the observance of sanitary and hygienic rules in order to limit its spread throughout society, preventing all fecal-oral diseases, is one of the important factors that must be carried out in addition to vaccination.

Safe and effective vaccines have been available in Europe and the United States since the early 1990s, making vaccination a key component of any prevention strategy. To date, inactive vaccines are the most commonly used, but live-weakened vaccine types are also increasing [18,19,20]. Inactivated vaccines are effective for pre-and post-exposure prophylaxis, providing gradual replacement of immunoglobulin-based passive prophylaxis [21,22]. Vaccines have a number of advantages over immunoglobulins: they cause long-term immunity, are inexpensive and easy to apply. The use of immunoglobulins is now mainly limited to strengthening vaccination of immunocompromised and older patients, as vaccines are used in these populations as an alternative to vaccination for those with ineffective or anti-vaccination guidelines (people with allergies and children) [23,24].

WHO recommends vaccination only for at-risk groups in countries with low infection rates and very low [18]. Universal vaccination of children in many countries has led to a significant decrease in hepatitis A infection in both children and unvaccinated adults [25,26]. The vaccine is given alone or in combination, usually in two to three doses at intervals of at least 6 months. However, a single dose was adopted in several countries as more effective [27, 28]. But further studies still need to be carried out whether a single-use hepatitis A vaccine provides long-term immunity. Although hepatitis A vaccine is highly effective, some cases of avoiding vaccination with a positive selection of antigenic variants have been reported [29].

Given the growing socio-economic development and the forecast of worsening sanitary and hygienic conditions, infection with hepatitis A infection can lead to widespread spread, which can lead to severe cases of the disease among children and liver failure even to an increase in cases associated with death. As a result of this, there has been evidence of an increase in overtime lost in families and health care facilities, schools, colleges, and workplaces, leading to significant economic losses. Fortunately, there are effective vaccines that help prevent the burden of disease and protect the body for the long term. A 2003 study on the efficacy of the hepatitis A vaccine found that the efficacy of inactivated vaccines was 86% (95% CI: 63-95%). The combined attenuated vaccine efficacy was 95% (95% CI: 81-99%) [30]. They should now be used more widely to protect the population from the increasing disease burden of hepatitis A. Therefore, the inclusion of the hepatitis A vaccination program by all states in the national vaccination program is economically effective and saves children's lives.

Conclusion

- In conclusion, the prevalence of acute hepatitis A infection is widespread among preschool and school-age children. This is evidenced by the fact that among these age groups there is no immunity from infection and a low vaccine vaccination rate.

- In addition, the immediate Organization of hepatitis A vaccination even for vulnerable groups, which will help prevent the spread of hepatitis A on a large scale in the future.

- It is also recommended by the countries of the world to include this vaccination process in the national vaccination program to prevent complications related to acute hepatitis A.

-Increasing the general understanding and information about viral hepatitis A, its prevention measures among the population, including compliance with the rules of personal hygiene, as well as regular medical examinations, are among the important preventive measures. If the epidemiology of the disease is not well understood and the appropriate measures to control are not carried out in time, the hepatitis A epidemic in the population can lead to an outbreak again.

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